

## CLAIMS

What is claimed is:

1. A cooling system comprising:
  - a compressor rack including a plurality of compressors;
  - a controller dedicated to each compressor of said plurality of compressors, each controller including a memory operable to store configuration data specific to said compressor, said configuration data including data identifying said compressor and providing compressor operating units; and;
  - a system master operable to command each said controller to send said configuration data to said system master, said system master operable to store a copy of said configuration data for each said compressor.
2. The cooling system of Claim 1, wherein said system master is operable to command each said controller to send said configuration data to said system master.
3. The cooling system of Claim 1, wherein said system master is operable to modify said configuration data.
4. The cooling system of Claim 1, wherein said system master is operable to send new configuration data to each said controller.

5. The cooling system of Claim 1, wherein said controller includes a microprocessor.

6. The cooling system of Claim 1, wherein said microprocessor functions as a communication gateway for communicating with said system master.

7. The cooling system of Claim 1, wherein said configuration data includes at least one or more of the group comprising: compressor information, compressor model code, compressor serial number, application, application temperature range, refrigerant code, oil code, oil charge, customer information, customer name, customer model number, control configuration, anti-short cycle time, discharge pressure cut-in, discharge pressure cut-out, discharge pressure sensor option enabled, discharge trip time, discharge multiplier, discharge divider, discharge temperature cut-out, oil add set point, oil stop add set point, oil trip set point, oil on time, oil off time, oil add period, shake limit, shake count, suction pressure low limit, suction pressure high limit, suction multiplier, suction divider, suction pressure sensor option, event history, compressor cycles, compressor on time, discharge pressure trips, discharge temperature, motor trips, oil trips, suction pressure limit trips, shake limit trips, events since cleared.

8. The cooling system of Claim 1, wherein said sensor data includes at least one or more from the group comprising: anti-short cycle time, discharge pressure cut-in, discharge pressure cut-out, discharge trip time, discharge multiplier, discharge divider, suction pressure cut-in, oil stop add, suction pressure cut-out, suction multiplier, suction divider, oil add, oil trip, oil on time, oil off time, oil add period, vibration limit, vibration count.

9. A cooling system comprising:

- a first compressor;
- a first controller including first configuration data for said first compressor;
- a first sensor associated with said first compressor;
- a second compressor;
- a second controller including second configuration data for said second controller;
- a second sensor associated with said second compressor; and
- a system master in communication with said first controller and said second controller, said system master operable to interrogate a status of said first controller and said second controller, said system master operable to command said first controller and second controller to send said first configuration data and said second configuration data to said system master, and said system master operable to command said first controller and said second controller to send said first sensor data and said second sensor data.

10. The cooling system of Claim 9, wherein said system master is operable to command said first or second controller to send said first or second sensor data, respectively, to said system master.

11. The cooling system of Claim 9, wherein said system master is operable to modify said configuration data.

12. The cooling system of Claim 9, wherein said system master is operable to send new configuration data to said first and second controllers.

13. The cooling system of Claim 9, wherein said first and second controllers include microprocessors.

14. The cooling system of Claim 13, wherein said microprocessors function as a gateway for communicating with said system master.

15. The cooling system of Claim 9, wherein said configuration data includes at least one or more of the group comprising: compressor information, compressor model code, compressor serial number, application, application temperature range, refrigerant code, oil code, oil charge, customer information, customer name, customer model number, control configuration, anti-short cycle time, discharge pressure cut-in, discharge pressure cut-out, discharge pressure sensor option enabled, discharge trip time, discharge multiplier, discharge divider, discharge temperature cut-out, oil add set point, oil stop add set point, oil trip set point, oil on time, oil off time, oil add period, shake limit, shake count, suction pressure low limit, suction pressure high limit, suction multiplier, suction divider, suction pressure sensor option, event history, compressor cycles, compressor on time, discharge pressure trips, discharge temperature, motor trips, oil trips, suction pressure limit trips, shake limit trips, events since cleared.

16. The cooling system of Claim 9, wherein said sensor data includes at least one or more from the group comprising: anti-short cycle time, discharge pressure cut-in, discharge pressure cut-out, discharge trip time, discharge multiplier, discharge divider, suction pressure cut-in, oil stop add, suction pressure cut-out, suction multiplier, suction divider, oil add, oil trip, oil on time, oil off time, oil add period, vibration limit, vibration count.

17. A compressor comprising:

    a housing;

    a fluid compression mechanism disposed in said housing;

    a motor driving said fluid compression mechanism;

    a controller disposed on said housing and including a memory and a communication gateway, said memory storing configuration data specific to the compressor, said configuration data identifying said compressor and providing compressor operating limits, said communication gateway operable to communicate with a system master and allow said memory to be copied, modified, or replaced under the control of the system master.

18. The compressor of Claim 17, wherein said controller sends said configuration data to the system master through said gateway.

19. The compressor of Claim 17, wherein said controller includes a microprocessor.

20. The compressor of Claim 19, wherein said microprocessor functions as said communication gateway.

21. The compressor of Claim 17, wherein said configuration data includes at least one or more of the group comprising: compressor information, compressor model code, compressor serial number, application, application temperature range, refrigerant code, oil code, oil charge, customer information, customer name, customer model number, control configuration, anti-short cycle time, discharge pressure cut-in, discharge pressure cut-out, discharge pressure sensor option enabled, discharge trip time, discharge multiplier, discharge divider, discharge temperature cut-out, oil add set point, oil stop add set point, oil trip set point, oil on time, oil off time, oil add period, shake limit, shake count, suction pressure low limit, suction pressure high limit, suction multiplier, suction divider, suction pressure sensor option, event history, compressor cycles, compressor on time, discharge pressure trips, discharge temperature, motor trips, oil trips, suction pressure limit trips, shake limit trips, events since cleared.

22. The compressor of Claim 17, wherein said sensor data includes at least one or more from the group comprising: anti-short cycle time, discharge pressure cut-in, discharge pressure cut-out, discharge trip time, discharge multiplier, discharge divider, suction pressure cut-in, oil stop add, suction pressure cut-out, suction multiplier, suction divider, oil add, oil trip, oil on time, oil off time, oil add period, vibration limit, vibration count.